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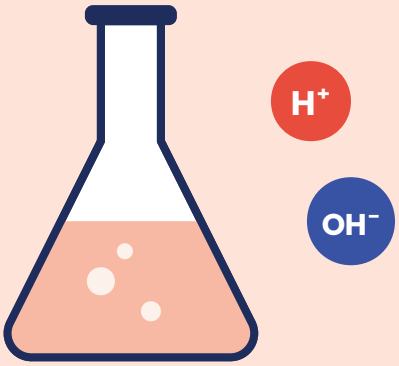
Year 8 · KS3 Chemistry · GCSE foundations

Acids, Alkalis & Salts



Mark Scheme

Answers and marking guidance for the Year 8 Acids, Alkalis & Salts homework worksheet. Total: 75 marks.



What's inside

Section A	The pH scale, acids, alkalis & indicators	Q1–Q3 · 22 marks
Section B	Strong & weak acids and neutralisation	Q4–Q6 · 21 marks
Section C	Naming salts, word equations & gas tests	Q7–Q9 · 28 marks
Challenge	Plan your own salt	Q10 · 4 marks

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Section A — The pH scale, acids & alkalis — 22 marks

Q	Answer / marking guidance	Mark
1a	**B: acid · yellow · very acidic (accept fairly acidic)** **C: neutral · green** **D: alkali · blue · slightly/moderately alkaline** **E: alkali · purple · very alkaline** 1 mark per cell (11 cells)	11
1b	**A (lemon juice)**	1
1c	**E / oven cleaner — very strong alkali (pH 14), corrosive, burns skin**	1
2	**a) below; hydrogen b) above; hydroxide c) 7 d) indicator**	6
3	**a) acidic b) alkaline c) it shows the actual pH / how strong the acid or alkali is (litmus only shows acid or alkali)**	3

Section B — Strong & weak acids, neutralisation — 21 marks

Q	Answer / marking guidance	Mark
4a	**P**	1
4b	**Q**	1
4c	**In P the acid has ionised completely (1) — all molecules have split into H^+ and Cl^- ions, none left whole (1).**	2
5a	**Strong: hydrochloric, sulfuric, nitric. Weak: ethanoic, citric, carbonic.** 1 mark each	6
5b	**Nitric → HNO_3; Ethanoic → CH_3COOH; Hydrochloric → HCl; Sulfuric → H_2SO_4**	4
6a	**Baking soda (1) — it is an alkali, so it neutralises the acid (1).**	2
6b	**The base neutralises the extra stomach acid / raises the pH.**	1
6c	**pH goes up / towards 7 / soil becomes less acidic.**	1
6d	**purple → green (2); pH 7 (1)**	3

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Section C — Naming salts & word equations + Challenge

28 + 4 marks

Q	Answer / marking guidance	Mark
7	**Row 1: sodium chloride (given) · sodium sulfate · sodium nitrate** **Row 2: magnesium chloride · magnesium sulfate · magnesium nitrate** **Row 3: copper chloride · copper sulfate · copper nitrate** **Row 4: calcium chloride · calcium sulfate · calcium nitrate** 1 mark each (11). Accept copper(II). Do not accept 'chlorine'.	11
8a	**sodium chloride + water**	2
8b	**zinc sulfate + water**	2
8c	**magnesium chloride + hydrogen**	2
8d	**potassium nitrate + water**	2
8e	**calcium chloride + water + carbon dioxide** (any order)	3
8f	**copper oxide (accept copper hydroxide) + nitric acid**	2
9	**a) hydrogen b) carbon dioxide c) metal oxide d) bubbles / fizzing (metal gets smaller)**	4
10	**e.g. magnesium + sulfuric acid → magnesium sulfate + hydrogen** (or Mg oxide / hydroxide / carbonate) **e.g. potassium hydroxide + nitric acid → potassium nitrate + water** 1 mark reactants, 1 mark products, per equation. Do not credit potassium metal (too reactive to use safely).	4

Teacher note: accept sulphate/sulphuric spellings. Word equations must use an arrow; do not credit formulae in place of names in Q8. Suggested grade bands: 64–75 Excellent · 49–63 Good · 34–48 Developing · below 34 Revisit notes.